Evaluating Social Change Games: Employing the RETAIN Model

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ABSTRACT

The RETAIN Model is a game design and evaluation model for serious games. In this study, educators evaluated social change web-based and mobile app games using the RETAIN model rubric. In general, web-based games scored higher on the RETAIN rubric than their mobile app counterparts. In addition, the educators analyzed the social change games for their “hidden curriculum.” In some cases, the rubric and “hidden curriculum” contributed to educators altering the way they used the games they had appraised by supplementing context, incorporating discussion, or not using the games at all. The RETAIN model rubric offered educators a tool to evaluate digital games.

KEYWORDS

Apps Evaluation, Apps Integration, Knowledge Transfer, RETAIN Model, Teachers

INTRODUCTION

As educators pursue active learning options to engage and incentivize students to learn course content, incorporating games in learning has been found to be an active learning option that moves students from being passive recipients to active learners (Koster, 2013). The interactive nature of games, students’ motivation to play, increased engagement, and advancing technologies have teachers vested in planning instruction that includes gamification (Dominguez, et al. 2013) and serious games (Gouveia, Lopes, & de Carvalho, 2011; Iten, & Petko, 2016). Research regarding the pedagogy of serious games in teaching and learning is scant. Further, educators are often unaware as to which games are the most effective for transfer of learning (Kenny & McDaniel, 2011) and how to incorporate serious games (Azadegan, 2012). Teacher’s dispositions and beliefs towards the academic benefits of games and personal efficacy for implementing games in instruction lags in comparison to the research (Kenny and Gunter, 2011).

As access to mobile devices burgeons in education, through the availability of tablets, smartphones, and laptop programs, the use of mobile and Web-based digital game apps has grown (Seilhamer, Chen, Bauer, Salter, & Bennett, 2015). Increased accessibility, devices ease of use, and students’ natural adeptness towards mobile apps and digital learning afford new and multiple active learning opportunities. Additionally, since many apps and Web-based games are free or low cost, instruction of academic content may be supplemented through web and mobile apps with their affordances of personalized and active learning. By fostering, “learning by doing” deeper learning can be promoted (Altamirano and Jaurez, 2013) and learner-centered pedagogies supported (Crompton, 2013).

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Mobile and web-based game apps are not only incorporated into learning to compliment core academic content areas, but digital game apps have been assigned to inform and persuade players regarding social and community concerns. Social change games are characterized by their purpose to develop: (a) a social issue awareness (Schreiner, 2008), (b) personal empathy (Mariani, & Gandolfi, 2016), and (c) positive actions towards community change (Gerber, & Gaitan, 2017). Apps for social change leverage technology to inspire community action (Fogg, 2003). Examining this genre of mobile and Web-based apps has not been examined beyond a pilot case study (Campbell & Gunter, 2017).

Screening the validity of educational mobile apps intended to support classroom instruction offers teachers a rationale for including mobile apps in instruction. For these reasons, the current study was developed to assess the effectiveness of Web-based games and mobile game apps for social change learning. A rubric built on the RETAIN model provided a means for educators to quickly assess social change games for transfer of knowledge. The RETAIN model, which was developed by an instructional designer, an educator, and a game designer (Gunter et al. 2007; Kenny & Gunter, 2011), was chosen because it had previously been utilized to assess console-based and computer-based games (Gunter, 2011; Zhang, Fan, & Xing, 2010). Further, the RETAIN model has been used as a framework for the design of a multi-player tablet application developed to teach students about the water cycle WaterOn! (Dos Santos, Strada, Martina, & Bottino, 2016). Because of these reasons, the following study, utilized the RETAIN model rubric to assess apps for social change for knowledge transfer.

**DIGITAL GAMES**

Digital games are pervasive in our culture. In the United States, approximately 97% of children and adolescents play games daily for at least one hour (Granic, Lobel, & Engels, 2014). Lee and Hammer (2011), attributed students’ motivation to play games to the social, emotional, and cognitive connections that take place when players are engaged in game playing. While motivation can contribute to game play and engagement, motivation does not ensure learning. However, some studies attribute game play to improved cognitive skills such as increased working memory (Barlett et al., 2009) and problem-solving, although multiple studies yielded differing results (Connolly, 2012).

Digital game mechanics such as music, narrative, video, and images contribute to learners’ interest and user experience. The storyline, music, and visuals are immersive elements that promote interactivity and are found in most video, console, and game apps, although these elements may have technological limitations (console versus mobile apps). However, when there are technological limitations as realized in mobile application, digital resources like games can be incorporated to gamify the learning experience. Mobile game apps and Web-based games share elements of gamification including but not limited to both are: (a) interactive; (b) problem-based; (c) manual-free; (d) includes visuals; (e) fosters a fail-safe environment; (f) personalized environment; (g) feedback-driven (Kenny, Gunter, & Campbell, 2017).

**WEB-BASED SOCIAL CHANGE GAMES**

Technology contributes to social change in a myriad of ways (Fogg, 2003). One such way is Web-based games for social change. These scenario-based games immersed the learner in a story that informed the player about social issues from varying perspectives to increase awareness and promote advocacy (Campbell & Gunter, 2017). Further, while playing these games, players are engaged in making choices and experience the consequences of their decisions in a fail-safe environment.

Within the genre of social change games, content varies and may include games to promote sustainability, proper health care, human rights, civics, conservation, and other social problems. Games for social change have been incorporated into teaching and learning in lieu of lectures, as an adjunct to a lecture, or as an introduction to a local social issue prior to community advocacy. These types of games have been identified as influencing explicit and implicit actions and attitudes.
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